

25. (New) The voltage regulator of claim 1, wherein the feedback circuit uses the measurement to control a duty cycle of the power switch.

REMARKS

I. Formalities

Formal drawings are enclosed for the Examiner's approval.

Applicant will submit a revised declaration identifying the application by serial number and filing date in response to the next Office Action or Notice of Allowability.

II. Claims

Claims 1-22 are pending. Claims 23-25 have been added.

Claims 1-2, 4, 6-9 and 16-20 stand rejected as anticipated by U.S. Patent No. 5,422,562 to Mammano et al. ("Mammano").

As discussed on page 1 of Applicants' specification, in a conventional switching regulator, the feedback controller continuously monitors an electrical characteristic of the circuit, such as the output voltage. Such a feedback controller uses the continuously measured electrical characteristic to continuously generate a control signal for the pulse modulator. In contrast, claim 1 calls for a sampling circuit to make and capture a measurement of an electrical characteristic of the voltage regulator at a discrete moment of time. The feedback circuit receives the captured measurement and uses it to control the duty cycle.

Mammano teaches a control circuit that functions in parallel with the regulator to compensate for sudden changes in the load. However, Mammano does not teach anything similar to a sampling circuit that makes a measurement at a discrete moment of time, and captures that measurement for use by the feedback circuit. Rather, Mammano teaches conventional continuous monitoring.

Therefore, claim 1, and the claims depending therefrom, should be allowable.

In addition, Mammano fails to teach measuring the current passing through the filter as recited by claim 4, using the average of measurement made at different times to control the power switch as recited by claim 9, using switched-capacitor circuits to convert the measurement into a charge as recited by claim 17, or using an analog-to-digital to convert the measurement into a digital signal as recited by claim 18.

The Examiner indicated that claims 3, 5 and 10-15 would be allowable if rewritten in independent form including the limitations of the base and intervening claims. Claim 10 has been amended as suggested by the Examiner. New claim 23 includes essentially the same limitations as claim 3, and new claim 24 includes essentially the same limitations as claim 5. The limitation of a variable duty cycle has been eliminated from several of the claims to emphasize that the invention may be applicable to pulse width, pulse frequency, and other modulation techniques. The term "charge in" has been changed to "charge on" to more closely correspond to terminology used in the art.

Claims 21 and 22 stand allowed.

Applicants submit that all of the claims are now in condition for allowance, which action is requested.

Please charge any additional fees, or make any credits, to Deposit Account No. 06-1050.

Respectfully submitted,

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